Subject-Object Asymmetries and the Relation of Internal Merge and Pied-Piping

1. Overview: The paper strives to explain subject-object asymmetries (SOA) from GB, traditionally accounted for in terms of the *Empty Category Principle* (ECP). It is shown that it is possible to analyse SOAs by adhering to Merge, the most fundamental structure building operation. Further topicalization, successive-cylic movement and complementizer-agreement (comp-agr) in Bavarian, English superiority and the *Vacuous Movement Hypothesis* (VMH) are discussed.

2. Crucial data: Subjects cannot extract, objects can, (1a) vs. (1b). A similar phenomenon is experienced in cases of subextraction, (2a) and (2b). Another puzzle that falls into this class is the fact that adjuncts pattern with subjects, not with objects, (3a) vs. (3b,c) (Huang's 1982 *Condition on Extraction Domain*). The question is, why can objects and elements from within them be extracted more easily than subjects, elements from within subjects, and adjuncts.

3. The idea: The dichotomy in (1)-(3) is connected to the underlying structural difference. The present work accounts for this without introducing new principles to the grammar (e.g. Rizzi & Shlonsky 2005, Uriagereka 1999) or appealing to the ECP. To do so Merge is defined in the following way: *Merge takes two syntactic objects α and β and combines them, which results in a new object [α, β]. One of the two elements becomes the subset of the other.* [α, β] $\subseteq$ [γ, [α, β]]. Once [γ, [α, β]] is formed γ cannot extract and leave [α, β] behind. This intuition lies behind descriptive principles like the *Left Branch Condition* (LBC, Ross 1967) or *Connectedness* (Kayne 1984). I.e. the structure merged to an element to which Internal Merge (IM) applies, must undergo IM together with this element (also Koster 2005). To achieve this, the following condition on IM has to be made: *IM at derivational stage Σ_i must apply to binary sets (= informally labels) within the same projection line as the head H inducing IM by Agree, thus to any such set from Σ_{i-1}, Σ_{i-2},... Σ_{i-n}.* Projection line is defined in terms of c-selection (Abels 2000). An effect is that left branches cannot extract, because when they are introduced into the derivation and IM applies to them the structure they are merged with has to be moved with them. This explains, why both subjects and adjuncts are impossible to extract without any further licensing. Elements within subjects cannot move, since at the relevant derivational stage they are not part of H's projection line. In addition it follows that objects cannot move, if another element is embedded within them, exemplified in (4b). The present theory accounts for LBC effects such as (5b) and Kayne's 1984 data.

4. Successive Cyclic Movement and the role of agreement: Data from Bavarian show that elements undergoing IM through embedded [Spec,CP] are able to pied-pipe the embedded CP, which follows from the present theory (Bayer 2001, von Stechow & Sternefeld 1988 and references therein). Both pied-piping and further movement without it are possible (6b,c), but staying in the embedded [Spec,CP] without pied-piping is impossible (6a). Adjuncts, though, can only pied-pipe the CP, but cannot extract alone (7). It is suggested that this is related to agreement. It has an effect similar to resumption, which can make extraction from islands licit (Ross 1967). I.e. it indicates, from which position a subject comes from (among others Borer 1986, Bresnan & Mchombo 1987). Crucial data come from comp-agr in Bavarian (8). Unlike in English no that-trace effect arises, which follows from agreement of Bavarian subjects with embedded C (Rizzi 1990 on French), which leaves an indicator of the extracted subject. Absence of comp-agr renders extraction of subjects impossible. In English extraction of subjects from embedded clauses must take place directly from [Spec,TP], because C does not bear agr-features and is thus not merged as in (9) (Bošković 1997, den Dikken 2006).

5. Simple subject questions and superiority: English short subject questions are argued to pied-pipe the whole IP (10), which bears on the question of the VMH (Chomsky 1986, den Dikken 2006, Koopman 2000). Evidence for this is English superiority. **Which books did which boy read?* is ungrammatical because of the following defintion of Agree: *A head H can undergo Agree with an element XP iff the first node dominating H also dominates XP.* In the case at hand pied-piping of the clause because of *wh*-movement of the subject has applied first. Thus C' does not dominate the object any more, which is now embedded in [Spec,CP], as in (11). This is contrasted with Bulgarian (Richards 2001).

Examples:

(1) a. ? Which paper$_1$ does John wonder [$_{CP}$ t_1 whether Bill will read t_1]?

    b. * Who$_1$ does John wonder [$_{CP}$ t_1 whether will t_1 write a paper on Tagalog]?

(2) a.   [which war]$_1$ does John think [t_1 that the president proposed [a referendum about t_1]?

    b. * [which country]$_1$ does John think [t_1 that [the president of t_1] proposed a referendum]?

(3) a. ? Who$_1$ did they ask [$_{CP}$ t_1 whether John has invited t_1 in a rude manner]?

    b. * Who$_1$ did they ask [$_{CP}$ t_1 whether had t_1 invited his family in a rude manner]?

    c. * [In which way]$_1$ did they ask [$_{CP}$ t_1 whether John had invited his family t_1]?

(4) a.   [what proposal of importance]$_1$ does John think [$_{CP}$ t_1 that the president has made t_1]?

    b. * [What proposal]$_1$ does John think [$_{CP}$ t_1 that the president has made [t_1 [of importance]]]?

(5) a.   [Whose book]$_1$ did John read t_1?

    b. * [whose]$_1$ did John read [t_1 book]?

(6) a. * Da Michl   hot   gsogt [$_{CP}$ [an Regenschirm]$_1$ dass da Hauns t_1 kafft   hot]

        the Michael   has   said   an umbrella   that   the John   bought   has

    b.   [An Regenschirm]$_1$ hot   da Michl   gsogt [$_{CP}$ t_1 dass da Hauns t_1 kafft   hot]

         an umbrella   has   the Michael said   that   the John   bought   has

    c.   [$_{CP}$ [$_{CP}$ [An Regenschirm]$_1$ dass da Hauns t_1 kafft   hot]$_2$ hot   da Michl   gsogt t_2]

            an umbrella   that   the John   bought   has   has   the Michael said

        'Michael said that John bought an umbrella.'

(7) a.   Da Fraunz glaubt [$_{CP}$ dass da Willi in an schlechten Stil   seine Biacha gschriebm   hot].

        the Frank thinks   that   the Willy in a bad style   his books   written   has

    b. ? [$_{CP}$[$_{CP}$ In an schlechten Stil   dass da Willi seine Biacha gschriebm hot]$_1$ glaubt da Fraunz t_1]

          in a bad style   that the Willy his books   written   has   thinks the Frank

    c. * [$_{CP}$ [In an schlechten Stil]$_1$ glaubt da Fraunz [$_{CP}$ t_1 dass da Willi t_1 seine Biacha gschriebm hot]

         in a bad style   thinks the Frank   that the Willy his books   written   has

        'Frank thinks that Willy has written his books a bad style.'

(8) a.   [Es Bauern]$_1$ hot   a gfrogt [t_1 wann-*ts* t_1 kumm-*ts*]

        you.2pl farmers   has-3sg he ask-3sg   when-2pl   come-2pl

        'He has asked when you farmers will come.'

    b. * [Es Bauern]$_1$ hot   a gfrogt [t_1 wann-Ø t_1 kumm-*ts*]

        you.2pl farmers   has-3sg he ask-3sg   when   come-2pl

(9)   [Who]$_1$ does John think [$_{TP}$ t_1 left home]?

(10)   [$_{CP}$ [Which boy read all books]$_1$ C t_1]?

(11)   [$_{CP}$ [Which boy read which books]$_1$ [$_C$, C t_1]]?

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